



FY2005 Nuclear Physics Workforce Survey

Office of Nuclear Physics

This report conveys the results of the October 2005 survey of scientific workforce in the Nuclear Physics (NP) program. The same procedure as in previous years was used. People were counted in the categories of permanent Ph.D. staff, temporary Ph.D. staff, Ph.D. staff not supported by DOE, DOE-supported graduate students, and graduate students not supported by DOE. Counts of Ph.D.'s awarded were also collected. In all cases, people were asked to self-define whether they were primarily doing experimental or theoretical work. Persons who receive support from the National Science Foundation are not included in this survey.

On October 1, 2005, we found that 2,193 supported and non-supported scientists and students were associated with the program. Of this number DOE supported 742 permanent Ph.D. staff, 388 temporary Ph.D. staff, and 509 graduate students. Not supported directly by DOE but associated with the program were an additional 206 Ph.D. staff and 348 graduate students. DOE also supported 80 graduate students who were awarded PhDs.

Summaries of the numerical data for the years 1986 through 2005 are provided as well as separate summary data for the national laboratories and universities, and statistics on the PhDs awarded.

James C. Hawkins

Results of Nuclear Physics Workforce Surveys

DOE Supported Workforce Data

Workforce Counts on October 1st

SUMMARY OF LABORATORIES & UNIVERSITIES

Both Experimental and Theory

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	603	658	662	672	666	676	699	707	687	657	689	682	689	690	676	683	702	727	746	742
Temporary Staff	268	271	275	284	275	296	330	375	362	342	346	360	380	394	363	362	364	410	403	388
Graduate Students	343	370	391	382	411	427	422	426	449	418	423	422	415	404	408	408	442	457	473	509
TOTAL	1,214	1,299	1,328	1,338	1,352	1,399	1,451	1,508	1,498	1,417	1,458	1,464	1,484	1,488	1,447	1,453	1,508	1,594	1,622	1,639

Ph.D.'s Awarded	76	79	66	87	70	81	114	99	97	101	96	97	100	95	87	67	100	79	66	80
------------------------	----	----	----	----	----	----	-----	----	----	-----	----	----	-----	----	----	----	-----	----	----	----

Experimental

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	475	518	527	531	525	529	549	556	536	515	536	538	547	551	542	536	554	577	586	582
Temporary Staff	206	210	215	215	205	226	247	280	278	260	263	280	299	298	286	287	277	319	308	295
Graduate Students	271	295	311	304	333	342	336	329	345	320	321	323	323	319	320	319	338	354	361	394
TOTAL	952	1,023	1,053	1,050	1,063	1,097	1,132	1,165	1,159	1,095	1,120	1,141	1,169	1,168	1,148	1,142	1,169	1,250	1,255	1,271

Ph.D.'s Awarded	48	54	45	64	52	59	88	73	80	78	71	66	67	70	56	48	67	63	45	51
------------------------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Theory

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	128	140	135	141	141	147	150	151	151	142	153	144	142	139	134	147	148	150	160	160
Temporary Staff	62	61	60	69	70	70	83	95	84	82	83	80	81	96	77	75	87	91	95	93
Graduate Students	72	75	80	78	78	85	86	97	104	98	102	99	92	85	88	89	104	103	112	115
TOTAL	262	276	275	288	289	302	319	343	339	322	338	323	315	320	299	311	339	344	367	368

Ph.D.'s Awarded	28	25	21	23	18	22	26	26	17	23	25	31	33	25	31	19	33	16	21	29
------------------------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Results of Nuclear Physics Workforce Surveys

DOE Supported Workforce Data

Workforce Counts on October 1st

SUMMARY OF NATIONAL LABORATORIES

Both Experimental and Theory

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	317	333	346	353	355	357	359	361	340	323	321	318	320	327	317	316	338	369	384	379
Temporary Staff	99	108	111	122	117	126	139	158	143	145	134	143	147	163	140	137	137	172	175	171
Graduate Students	36	38	45	49	58	58	53	57	65	58	62	63	79	62	53	55	57	77	68	88
TOTAL	452	479	502	524	530	541	551	576	548	526	517	524	546	552	510	508	532	618	627	638

Ph.D.'s Awarded	1	4	6	5	9	10	7	13	19	11	10	9	15	0	0	0	0	0	0	0
------------------------	---	---	---	---	---	----	---	----	----	----	----	---	----	---	---	---	---	---	---	---

Experimental

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	270	284	298	296	297	302	303	314	290	276	278	280	284	290	286	281	301	323	331	324
Temporary Staff	80	89	92	100	92	101	114	128	121	118	110	120	124	129	121	117	111	148	139	130
Graduate Students	35	36	43	46	53	48	47	52	60	53	57	58	70	55	49	48	54	70	60	80
TOTAL	385	409	433	442	442	451	464	494	471	447	445	458	478	474	456	446	466	541	530	534

Ph.D.'s Awarded	1	4	6	4	8	9	5	11	18	10	9	6	12	0	0	0	0	0	0	0
------------------------	---	---	---	---	---	---	---	----	----	----	---	---	----	---	---	---	---	---	---	---

Theory

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	47	49	48	57	58	55	56	47	50	47	43	38	36	37	31	35	37	46	53	55
Temporary Staff	19	19	19	22	25	25	25	30	22	27	24	23	23	34	19	20	26	24	36	41
Graduate Students	1	2	2	3	5	10	6	5	5	5	5	5	9	7	4	7	3	7	8	8
TOTAL	67	70	69	82	88	90	87	82	77	79	72	66	68	78	54	62	66	77	97	104

Ph.D.'s Awarded	0	0	0	1	1	1	2	2	1	1	1	3	3	0	0	0	0	0	0	0
------------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Results of Nuclear Physics Workforce Surveys

DOE Supported Workforce Data

Workforce Counts on October 1st

SUMMARY OF UNIVERSITIES

Both Experimental and Theory

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	286	325	316	319	311	319	340	346	347	334	368	364	369	363	359	367	364	358	362	363
Temporary Staff	169	163	164	162	158	170	191	217	219	197	212	217	233	231	223	225	227	238	228	217
Graduate Students	307	332	346	333	353	369	369	369	384	360	361	359	336	342	355	353	385	380	405	421
TOTAL	762	820	826	814	822	858	900	932	950	891	941	940	938	936	937	945	976	976	995	1001
Ph.D.'s Awarded	75	75	60	82	61	71	107	86	78	90	86	88	85	95	87	67	100	79	66	80

Experimental

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	205	234	229	235	228	227	246	242	246	239	258	258	263	261	256	255	253	254	255	258
Temporary Staff	126	121	123	115	113	125	133	152	157	142	153	160	175	169	165	170	166	171	169	165
Graduate Students	236	259	268	258	280	294	289	277	285	267	264	265	253	264	271	271	284	284	301	314
TOTAL	567	614	620	608	621	646	668	671	688	648	675	683	691	694	692	696	703	709	725	737
Ph.D.'s Awarded	47	50	39	60	44	50	83	62	62	68	62	60	55	70	56	48	67	63	45	51

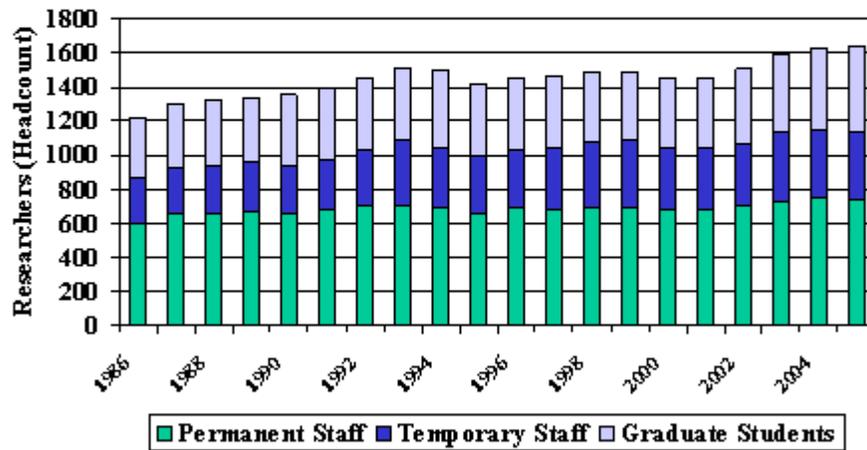
Theory

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Permanent Staff	81	91	87	84	83	92	94	104	101	95	110	106	106	102	103	112	111	104	107	105
Temporary Staff	43	42	41	47	45	45	58	65	62	55	59	57	58	62	58	55	61	67	59	52
Graduate Students	71	73	78	75	73	75	80	92	99	93	97	94	83	78	84	82	101	96	104	107
TOTAL	195	206	206	206	201	212	232	261	262	243	266	257	247	242	245	249	273	267	270	264
Ph.D.'s Awarded	28	25	21	22	17	21	24	24	16	22	24	28	30	25	31	19	33	16	21	29

FY2005 Nuclear Physics Workforce Survey

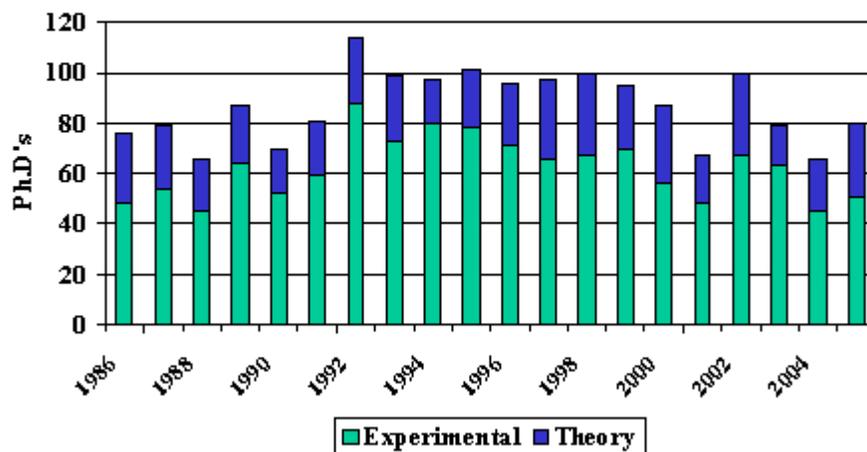
DOE Support Workforce

Laboratories and Universities



FY2005 Nuclear Physics Workforce Survey

Ph.D.s Awarded



FY2005 Nuclear Physics Workforce Survey

Statistics on Ph.D.s Awarded Since FY 2004*

- **Average Number of Years to Obtain a PhD**
 - 5.9 Years (Average Based on 141 data points)

- **% U.S. Citizen** 48.1% (% Based on 79 data points collected since FY2005)

- **Males/Females:** 83.1%/16.9% (% Based on 142 data points)

- **Race:** (% Based on 79 data points collected since FY 2005)
 - **White:** 77.2% **Asian:** 21.5% **Black or African American:** 1.3%
 - **Hispanic or Latino:** 0.0%
 - **Native Hawaiian and Other Pacific Islander:** 0.0%
 - **American Indian and Alaska Native:** 0.0%
 - **Some Other Race:** 0.0%

*Unless otherwise noted

FY2005 Nuclear Physics Workforce Survey

Statistics on Ph.D.s Awarded Since FY 2004

- **Initial Career Location: USA / Non-USA / Undecided:**
 - 83.2% / 10.5% / 6.3% (% Based on 143 data points)

- **Initial Career Path:** (% Based on 131 data points)
 - **Applied Research/National** 3.1%
 - **Business or Non-Nuclear** 10.7%
 - **Medical School/ Hospital:** 3.8%
 - **NP Basic Research / National Laboratory:** 15.3%
 - **NP Basic Research / University:** 35.1%
 - **NP Teacher / Professor:** 9.9%
 - **Other Teacher / Professor:** 6.1%
 - **Other Basic Research / National Laboratory:** 0.8%
 - **Other Basic Research / University:** 0.0%
 - **Research / Nuclear Industry:** 3.8%
 - **Non-Profit:** 0.0%
 - **Other** 2.3%
 - **Undecided:** 9.2%